SAN DIEGO STATE UNIVERSITY
College of Health and Human Services
Graduate School of Public Health
Division of Epidemiology and Biostatistics

PH 724: Advanced Methods in Epidemiology
Spring 2007

Day: Tuesday
Time: 4:00pm-6:40pm
Place: HH 214
Schedule

Instructor: Rick Shaffer, Ph.D., MPH
Office Hours: 1-3 pm Tues, PSFA 185A
Office Phone: (619) 594-3452
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REQUIRED TEXTS:
-Rothman, K.J. and Greenland, S., *Modern Epidemiology*, 2nd ed., 1998.
-Gordia, Leon. *Epidemiology 3rd Ed.* Philadelphia, W.B.Saunders Co.-
Additional readings as noted on syllabus(reader available at Cal Copy).

GRADING POLICY:
Basis of Grade:

Midterm Exam:	30%
Modeling project:	20%
Quizzes	15%
Course Journal:	15%
Presentation/ Class participation:	20%

Course objectives:

Upon the completion of this course, student should:

1. Be able to critically review the methodology and results from published epidemiologic manuscript.

2. Be able to calculate and interpret measures of association and risk from epidemiologic studies.

3. Be able to discuss the effects of design bias on the outcome of community intervention trials.

4. Be able to calculate and interpret common methods for the adjustment for confounding in the analysis of epidemiologic studies.

5. Be able to determine the appropriate use of methods to analyze follow-up data in epidemiologic studies and interpret the results of this type of mathematical modeling.

6. Be able to explain the interpretation of interaction (effect modification) and the analysis of trends in epidemiologic data.

Course structure: The course sessions will be divided into a didactic portion and a hands-on/discussion session. The first 90 minutes of each session will be a lecture format provided by the instructor. The

topics for the lectures are listed in the course schedule below. The last 60 minutes of each session will be very informal and will be used for either: 1) discussion of a specific methodological issue in a current published manuscript; 2) demonstration of the practical application of methods presented in the lectures. These discussions will be lead by doctoral students.

Course schedule:

Jan 23: **Topic**: **C**ourse outline
Definitions
Review of basic epidemiology

Jan 30: **Preparation:** **Chap 13, Rothman, Reference #16**

Topic: Fundamentals of Epidemiologic Analysis
Discussion: Relative Excess Risk

Feb 6: **Preparation:** **Chap 5,6,7, Rothman, Reference #5 & #10**

Topic: Study design consideration
Discussion: Type III errors

Feb 13: **Preparation:** **References #11, #12, #13, #18**
Topic: Community intervention trials
Discussion: _____

Feb 20: **Preparation:** **Reference #7 and #22**

Topic: Adjustment of population attributable risk
Discussion: Doubling Dose

Feb 27: **Preparation:** **Chap 18, Rothman, Reference # 7**

Topic: Interaction/effect modification
Discussion: Comparison of Non-particpants

Mar 6: No Class

Mar 13: **Preparation:** **TBD**

Topic: Dose response/trend
Discussion: Type IV error

Mar 20: **Preparation:** **Reference #17**

Topic: Analysis of follow-up data
Discussion: _____

Hand Out MIDTERM EXAM

Mar 27: **Spring Break**

Apr 3: **Topic:** Analysis of follow-up data
Discussion: Hands-on modeling, Part #1

Apr 10: **Topic:** Analysis of follow-up data
Discussion: Hands-on modeling, Part #2

Apr 17: **Preparation: Roth,Chap 32, References #1,#2,#3,#15,**

Topic: Meta-analysis
Discussion: Role of Epidemiology,

Apr 24: **DUE: Injury Project**
Preparation: Roth, Chap 25, References #20,#21

Topic: Evaluation of screening programs
Discussion: Role of Epidemiology (continued)

May 1: **DUE: Course Journal**
Topic: Communicating your findings
Discussion: Role of Epidemiology, (continued)

May 8: Course Review